

*IN-SITU* POST-DEPOSITION  
OXIDATION TREATMENT FOR  
IMPROVED MAGNETIC RECORDING  
MEDIA

ABSTRACT OF THE DISCLOSURE

A method of manufacturing a magnetic recording medium comprises sequential steps of:

- (a) providing an apparatus for manufacturing the medium;
- (b) supplying the apparatus with a substrate for the medium;
- 5 (c) forming a magnetic recording layer on the substrate in a first portion of the apparatus;
- (d) treating the magnetic recording layer with oxygen gas in a second portion of the apparatus at a sub-atmospheric pressure and for an interval sufficient to provide the resultant medium with at least one of the following,
- 10 relative to a similar medium manufactured by a similar method but wherein the oxygen treatment of step (d) is not performed:
  - (i) a more negative nucleation field ( $H_n$ );
  - (ii) increased remanent squareness ( $S_r$ );
  - (iii) increased signal-to-medium noise ratio (SMNR);
- 15 (iv) narrower switching field distribution (SFD); and
- (v) decreased thermal decay rate; and
- (e) forming a protective overcoat layer on the oxygen-treated magnetic recording layer in a third portion of the apparatus.